

N<sup>H</sup>  
Newburyport Dec 5. '92

Mr Geo C. Davenport

Dear Sir

I wrote Professor Eaton  
a while ago that I had a plant  
of a hybrid fern (I claim it to be  
a hybrid between *A. marginal* and  
*A. cristatum*) in my garden of  
which I had previously sent him  
specimen fronds and that he  
could have it to examine if  
he wished. He informs me that  
he has sent the specimens to you  
for examination and gave me  
your address. I make the same  
offer to you if you would like  
it and I can manage to  
lift it as it is probably frozen

I have found this fern in  
several places

I would like also to know if  
he included in the fronds sent  
an odd form of *A. Thelypteris*  
(*A. novaborensis*?)

Yours truly

Raynal Dodge

Newburyport

Mass

H

Newburyport 8-7. '93

Mr Davenport.

Dear Sir;

Replying to yours of today  
I would state that Saturday  
the 12<sup>th</sup> would be entirely agree-  
able to me as a day to make an  
excursion in quest of my hybrid  
It will be necessary however  
to make a little change in  
your programme.

I have never found but five  
plants outside of Oxford

and those I have taken up  
I have found in Boxford  
some fifteen or twenty of  
them in fact I found nine  
at Crooked Pond last  
week taking five and leav-  
ing four and I think If  
I should go there for that  
express purpose that I could  
find quite a number

So then if you take the 12.15  
train on the western division  
for Topsfield I will take the  
11 from Newburyport for  
the same place and await  
your coming at Topsfield  
depot

It will then be necessary  
to hire a team or a team  
and a driver at Topsfield  
and drive to Crooked Pond  
three miles.

Returning a train runs  
through Topsfield for  
Boston about 6.15

Yours truly

Raynal Dodge

Newburyport 9/17 '93

Friend Davenport.

I have been over into Seabrook woods to day. I spent from 8 this morning until dark looking up the odd form of Nore Thelypteris? And by the way: I answered one of your questions wrongly last Sunday when you asked me where I first noticed this fern about 12 years ago. I should have said in Seabrook Woods instead of Galisbury. I have a friend yet which I collected at that time.

I went over with the determination to collect all the intermediate

forms I could find but curiously enough I failed to find any Seabrook woods is a fine locality for this fern and perhaps we would have been justified in trying to get there last Sunday and I should have attempted it if Dr Noyes had not been anxious that we should visit his locality. I went first to the locality where I first noticed it but the woods have been cut off in that particular place within a few years leaving the fern still growing there in a wet sunny place.

Now you are well aware that the natural conditions of this fern are wet and shade I consequently I found that it put on here a quite different appearance.

In fact at first sight the fertile fronds reminded me quite strongly of those of *Thelypteris* but on further investigation I found them to be very different from the *Thelypteris* which was growing amongst it.

1<sup>st</sup>. Because although the margins of the pinnae were somewhat reflexed in some cases considerably so yet the main difference was that all the pinnae were cundupliccate both in the sterile and fertile fronds giving the sterile fronds much the appearance of *Asplenium Filix-femina* when growing in the sun. Now the pinnae of *Thelypteris* were perfectly flat in both sterile and fertile

fronds the fertile fronds merely having the edges of the pinnae turned over in those pinnae which were fruitful.

2 The lowest one or two pair on both fronds were reflexed, elliptic lanceolate and much shorter than the others. whilst in *Helypteris* they were all in the same plane lanceolate and about the same length as the others

3<sup>d</sup> There was a great difference in color. The fronds of this fern are dark green, those of *Helypteris* are light bluish green. {Color not reliable G.E.D}

4<sup>th</sup> In larger size of the indusia which were however not quite as large as when the fern grows under natural conditions.

I think too that the new fern has more sori but I have

not yet counted them under the lens.

5. In the greater number of fertile fronds. Whilst there are about as many fertile as sterile fronds in the new fern in *T* helypteris there are many more sterile than fertile ones  
6 I did not find a single case in the *T* helypteris of a sterile frond being partly fertile whilst in the case of the new fern there were fronds with a few fruit dots on very many of the plants. The sterile and fertile fronds of the new fern looked much alike but the two fronds of *T* helypteris were quite different from each other

7<sup>th</sup>. A difference in the time of fruit maturity I shoul d that *T*helypteris was 10 or 12 days ahead of the other.

But it is getting late and as I have more to write you you may expect another letter in few days. I spent several hours making these observations going over quite a piece of ground and failed to find any ferns which did not satisfy these conditions and concluded that whatever this fern is it did not there in a favorable situation run into *Thelypteris*

R. D.

Newburyport 9/22 "93

Friend Davenport: To further discuss the points of difference between the odd fern and A. Thelypteris both growing ~~in~~ the exposed to the sun.

8<sup>th</sup> The veins in Thelypteris were nearly all forked in the other nearly all simple

9<sup>th</sup>  
*revised* Spores of the odd fern are light brown of Thelypteris nearly black quite so in masses (I send slide enclosed in package by express. Slide has Thelypteris spores in one half the cell and spores of the other fern in the other half)

10<sup>th</sup> A. Thelypteris has more fruit dots to each pinnae. Taking the

pinnae about in the middle of the fern and the pinnales about in the center of the pinnae in both cases: where *Helypteris* has 6 or 7 fruit dots the odd fern has only 4 or 5. The fronds of *Helypteris* are thicker. I have been measuring quite a number of fronds of each fern with a micrometer calliper measuring the lower pinnae of the sterile fronds. *Helypteris* measures about  $5\frac{1}{2}$  thousandths. The odd one  $4\frac{1}{2}$  thousandths and None about  $\frac{1}{4}$  one thousandths which is just about the thickness of the paper which the Boston Globe is printed on. Now .001 of inch being equal to .025 millimetres

$5\frac{1}{2}$  thousandths or .0055 = .1375 mm

$4\frac{1}{2}$  " " .0045 = .1125 mm

4 " " .004 = .1 mm

I think these dimensions are approximately correct.

Not thinking to obtain roots of the two ferns I am unable to compare them.

In the bundle I send you No 1 is that variety of *Asplenium* *Felix-femina* which grows exposed to the sun in dry places and which I have been in the habit of calling variety *rhaeticum* and No 2 are specimens of the odd fern growing in the sun with the pinnae folded together. I think that the resemblance between

them is very striking.

No 3 specimen when I first obtained it was similar to No 2 but taking it out from my portfolio Tuesday evening where it had laid since Sunday and placing it on the table I noticed ~~it~~ in a minute or two that the pinnae were unfolding in a curious way and in a short time they were most of them laying flat at which I was much surprised. When I found that it worked in that way I kept the other one under pressure. I do not know in what condition the other one (No 2) may be in when it reaches

you but when I send it all the pinnae but the upper ones are unduplicate.

Perhaps this one may unfold also if relieved from pressure and exposed to the atmosphere of a warm room.

No 4 is specimen of *Thelypteris* growing beside Nos 2 & 3 and No 5 is the New fern growing a few rods further on in the shade of trees.

Probably other distinctions between the two ferns might be made but I think that I have said enough to show that the two ferns are not allied except in the possible case of hybridity.

As relates to any differences between  
this fern and *Thelypteris* when  
both are growing in wet shades  
although as of course you are  
well aware the new fern grows  
most thriftily in the shade yet  
I could find no fertile fronds  
of *Thelypteris* in that situation.  
Abundance of sterile fronds  
but no fertile ones.

It only remains then to discuss  
the relations which this fern  
bears to *A. Noveboracense* which  
perhaps I may do at some future  
time if you care to listen.  
My object in writing to you  
in this way is not to interfere  
with your work at all but merely  
because I thought that I  
had ascertained some points  
and wanted find an appropriate  
listener.

And now I want to speak to you on another subject. Do you remember in the letter from Prof. Eaton which I showed you that he said he had suspicions that there was a hybrid between cristatum and Goldieanum. Well, last August when I ~~went~~ <sup>went</sup> to Mt. Holy. I was obliged to wait 4 or 5 hours for the train at Millers Falls. So I struck off into one of the swamps there and in looking about among the Goldieanus and cristatus I think that I found that hybrid. The leaves were not in ~~very~~ very good condition but Dr Noyes was so taken up with them

that I let him have them  
The roots however I brought home  
and if they come to any thing  
next year I will send you the  
fronds. ~~P.~~ Perhaps if Prof.  
Eaton is not going to investi-  
gate the subject you might get  
help from him if you care to.

Yours truly

R. D.

Newburyport 1<sup>st</sup>/3 "93

My Dear Mr Larenport.

Shortly after my last communication was made to you, I paid a second visit to Seabrook woods, obtaining considerable material and making some reflections. I have been lately looking over the material and adding somewhat to the reflections and I propose now to give you the results so far as they may relate to the fern which I have been calling the odd form. I took a somewhat different direction this time, going to Holly Mill Woods (See Whittier "My Playmate" verses "9815) and found that there this fern is very abun-

dant. In fact of the three forms this seems to be the most common I found there a large space where the woods had been cut off in what had evidently been a wet place but the heat of the sun had dried it up and here the odd fern was growing in abundance together with Thelypteris & Nove. I notice however that this fern only comes to perfection in very wet shady places in fact it seems as if it were necessary that for a good part of the year its roots should be in the water.

Thelypteris also needs water but also sun. I notice that when growing in complete shade Thelypteris runs pretty much to sterile fronds. As regards Nove although it does very well in shade on wet still I find it growing in quite

dry situations.

Till I could find there ferns growing pretty near each other. Now I found this fern as before said growing in the sun in masses with the sterile fronds pretty much dried up and blown away but the fertile fronds were still standing with their pinnae nearly all conduplicate like specimen I sent you before

At that time I sent you a specimen of odd form with conduplicate pinnae and one of Thelypteris with pinnae having only revolute margins both growing under the same conditions.

Now I send you similar speci-

mens of the odd one together with  
one of Nore growing in the sun  
and collected at same time and  
place.

You see that the Nore is scarcely  
affected by its exposure. The odd  
fern evidently feels the ~~eff~~ effects  
of the sun's light and heat to  
a much greater extent than Nore.

Going further into the woods and  
selecting a place where the three  
ferns grew near each other I  
dug up a lot of their rootstocks.  
Nore and the odd one were here  
growing about ten feet apart  
with thelypteris very near and  
as far as I could judge grow-  
ing in the same kind of soil.  
I send you specimens which  
you can compare with yours.

The thelypteris roots are shiny black  
with black root hairs and send out  
long runners.

The rootstocks of Nore are brown  
with brown root hairs and shorter  
runners.

The rootstocks of the odd one  
are brown with very short runners.  
Neither does the main stalk lengthen  
much from year to year and  
the bases of the former years stalks  
seem very persistent.

I went down to Pettingell's Swamp  
one afternoon since I was in Sea-  
brook, ~~and~~ to a spot where I knew  
that some plants of this odd fern  
grew, and verified these results,  
as I thought completely.

I noticed in places where the odd fern grew in clumps so that the fronds supported each other that the normal position of the two lower pinnae was deflexed and brought round just at right angles to the rachis; but when the fronds were declined the upper angle between the rachis and pinnae was increased just enough to keep the pinnae horizontal in both planes, which I take it is caused by the action of light I have noticed the same occurrence in some other ferns. in *Osmunda cinnamomea* for instance

Another thing I noticed was that the dark color of the *Thelypteris* root extended up into the rachis so that with-

out looking at any other part of the fronds. I could distinguish *Thelypteris* from the odd one by this mark alone.

I notice in looking at the ~~odd~~ sori of *Nore*. *Thelypteris* & the odd one with a power of 60 that the indusia of *Thelypteris* are minute and smooth if *Nore* minute with glandular edges and if the odd one much larger and glandular nearly all over. The sporangia also larger and longer stalked.

Sporae in odd one much brighter colored than in *Nore* whilst *Nore* spores are lighter than those of *Thelypteris*.

An other point of difference between Thelypteris and the odd one is that whilst the pinnae of Thelypteris are often considerably recurved those of the odd one are at most not recurved more than those of Nove.

I have been looking over fronds of the odd fern and those of Nove. after forked veins.

Although I find some forked veins in fronds of Nove especially in the basal lobes yet in fronds of the odd one I have not been able to find as many as one. Perhaps you may have better luck.

Another point of resemblance between the odd fern and Nove is that both have the lowermost pinnae deflexed although in ordinary Nove these pinnae

are so small that the fact does not attract much attention I have never noticed any thing of this sort in Thelypteris

In looking over great numbers of these odd fronds in Geabrook that day I must confess that I found a few which I was uncertain where to place.

These fronds would have perhaps two pairs of lower pinnae both deflexed and both pairs would be elliptic lanceolate but not as much so as in the case of the odd form the lower pairs being sometimes considerably smaller than the upper ones and sometimes not.

The fruit dots too would be intermediate in size between those of Nore and those of the odd one

We might of course consider there to be hybrids. No doubt they were hybrids if hybrid is the right word, but it seems to me on the whole that the facts which I have given warrant the belief that this fern is not *thelypteris* and not an intermediate form but that with the exception of a general resemblance in outline to *thelypteris* (which although it amounts <sup>to</sup> but little has deceived our predecessors) it is really Nore intensified. The elliptical lanceolate forms of the pinnae one half or two thirds up the rachis was very marked in the specimens

which I collected in Te abruki and I still think that the loss of the lower most pinnae in the Nore fronds and ~~the~~ consequent change in outline of the ~~fronds~~ has caused ~~the~~ nearly all the pinnae of the variety to take on <sup>a</sup> elliptic lanceolate shape or at all events has made that shape more pronounced.

I would remark that although the margins of the odd fern are somewhat revolute in cases where it grows exposed to the sun yet I notice the same condition and to the same extent in some fronds of Nore.

If you should come to agree in the main with my con-

clusions, Professor Eatons definition  
of Nore which we have been so  
long accustomed to. - lanceolate  
in outline - tapering both ways  
from the middle - lowest two  
or more pairs gradually shorter -  
indusium minute - margin  
glandulariferous - will need  
revision.

When I made my last visit to  
to Seabrook I went by way  
of Merrimac to look up a  
plant of marginale + cristatum  
which I knew of and found  
two more one of them however  
being in infancy. I secured the  
roots & stalks and I want you to  
see the fronds from the small  
one. I gathered some small

fronds of marginale and some  
of cristatum of about the same  
size and would like to have  
you see the three beside each  
other.

I also pulled up a good many  
marginale and cristatum roots  
and brought home quite a num-  
ber together with their fronds  
but although the hybrid was  
our first subject still my  
attention has lately for some  
reason been directed more to  
this odd form.

But as this will probably be  
my last communication on  
that subject until I hear some  
thing explicit from you. I  
intend too look over my hybrid  
material in the near future  
and I was thinking that if

your views and mine should coincide that perhaps it would be as well to publish an account of this odd fern first and to let the other one rest for awhile.

There lives and flourishes in our city a german druggist Karl Castellum by name a man of considerable scientific attainments especially in the lines of chemistry and botany. I was speaking to him about this hybrid fern and he said that he should like to see specimens.

I wanted that he should also have specimens of marginale and cristatum for compar-

ison and so leaving the ship at 4 o'clock on a Saturday afternoon about three weeks ago I took the cars at the ship door and rode about two miles to the further end of the city and went to a spot where I ~~had~~ knew that marginale grows.

And in looking after those marginale friends, I found another hybrid of whose existence I never suspected.

The boy who went with us that day to Seabrook recognized it at a glance and said he "That is a Dick"

When we get these two cars from the docket I intend to send you specimens and let you tell what they are.

not find a scid of the odd one.  
Neither have I been able to  
find it in Boxford or Ipswich.

Raynal Dodge

As I view the case now it is a  
very interesting one of hybridity  
I found only one plant but  
I brought the rootstock home  
with me and planted it after  
taking off the fronds.

I also want you to see my specimen  
of *Boottii* and *spinulosum* growing  
on the same rootstock which I  
think I have somewhere in my  
file.

I believe that I did not tell  
you that I had been over to  
Chestacco swamp since I  
saw you and looked about  
for the odd form but although  
the location seemed to be  
a good one and Nore and  
the lypters plenty yet I could

X

8

Newburyport 11-5-'94

Mr George C. Davenport,  
My Dear Sir:-

your letter of  
Oct 10 received and read with pleas-  
ure.

I have come to same conclusions  
as you regarding the fern that I  
have called the odd New England  
through my examinations of the  
fern during the present year  
and that the few and in most  
situations very few cases of  
running together are the result  
of intermixing.

Your name for it is good but  
when I considered it a variety  
I used to think of *umbrohumidalis*.

As regards the hybrid. I am well aware that in the cases of Carex  
Salicis and Potamogeton your method of indication has been  
quite the proper thing of late but have not known of its  
adoption in the ferns.

Have any of the ferns of  
North America been indicated  
in this way.

Does any one write *Camptosorus*  
*rhizophyllum* × *Asplenium ebenum*  
for ~~A.~~ *ebenoides* or *Asplenium*  
*trichomanes* × *Asplenium ebenum*  
for *A. pinnulum*

Now this hybrid occupies the  
same position as regards cristatum  
and marginale that *A. Bootii*  
does to cristatum and spinulo-  
sum but is Bootii anywhere  
described as *A. cristatum* <sup>spinulosum</sup> ~~marginale~~

When Prof Coker named *A. Bradleyi*  
did he not know as well as he  
~~did~~ does at present that it was  
a hybrid between *reticulatum*  
and *mentarium*.

If the manner of induction  
which you mention is to be  
adepted why has not it been  
done with the ferns which I  
have mentioned whose character  
has long been known.

They have all received a distinctive  
name and why not the  
same in this case

I have also found *A. simulatum*  
in several other places this season  
two of them being well known  
to you viz: Cedar Pond in Wenham  
and Chebacco Pond in Essex  
but the stations were small and  
I could not find it at all in

the neighborhood of Warren R.I.,  
although I looked in several likely  
places.

Your notes on the Mexican ferns  
received.

I would like to have 25 Extras  
of your description of the New  
ferns and am willing to pay  
whatever charges are made

Raymond Dodge

Let me give you a few thoughts which have passed through my mind since writing my note

I wonder if this fern you have called *Dryopteris simulata* is not the North American representative of the European *Nonea* and I wonder if they are not both descended from the same stock and if they will not get further apart as time rolls by

I wonder how far north the typical *None* grows. Not far I should judge for it is late in fruiting

I wonder if the typical *None* is not an introduced plant here or rather an adventitious one.

I wonder if our beeches and birches and ~~other~~ many other

which have been given distinctive  
names differ from the European  
forms more than this simulata  
does from mine.

I wonder if the illustration of  
*Asplenium thelypteris* which is  
given in Anna Pratt's Ferns  
and Flowering plants of Great  
Britain is any thing like the  
European form of the plant.  
Two small pinnae for the  
lowermost ones.

If that is so our thelypteris is  
not like theirs.

And finally I wonder where I can  
get specimens of *Asplenium*  
*ebenoides* and *Botrychium lunaria*  
of New England growth. Under-  
woods in the Native ferns and their  
allies give them both from the  
New England states.

Dodge

Nantucket 1-19-95

Mr George C. Davenport

My Dear Sir:-

Your separates received and my  
only excuse for not acknowledging  
their receipt is that I received a few  
days previously some separates from  
the Gazette office and so ubiquitous  
arrived it did not so much attract  
my attention although at the time  
I had given mine all away  
Thanks for the same  
The only criticisms I have to  
offer on the article are that you  
give Seabrook as being in ~~New~~  
Massachusetts instead of New  
Hampshire and that you take  
the grounds that hybridism

in ferns is a rare occurrence in  
nature, where as I think it to be quite  
common.

I have accumulated quite a fund  
of evidence on this point some  
of which I think is going to surprise  
you

I wish you would bear in mind that  
I would like to obtain *A. ebenoides*  
and *B. lunaria* if I had these  
and *Selaginella selaginoides*  
and *Equisetum littorale* I should  
have a complete collection of  
the vascular cryptogams  
of New England and ninety eight  
species and varieties.

Underwood in his "Ferns and  
Fern allies" gives both *ebenoides*  
and *lunaria* from Connecticut  
but I do not know his authority.

Much obliged for the credit  
you give me in the article in  
the Gazette.

Yours truly  
Raynal Dodge

Newburyport 4/28/95

Mr George E. Davenport

Medford

Mass.

My Dear Sir, your note of March 30  
was duly received and I feel the  
force of your remarks regarding  
the disinclination of Mr Meehan  
and other botanists to admit the  
hybridity of ferns but I know that  
it is a fact of very common occur-  
ence.

Mr Meehan in his Native Flowers  
and Ferns of the United States  
Series second. Vol 1<sup>st</sup> page 113  
gives an illustration of *Asplenium*  
*ebenoides* and also an account  
of the discovery of the same

2

and a history of Mr Scott's attempts to attract the attention of botanists to the plant in which it seems he was for a long time unsuccessful. He then goes on to say: but I quote Mr Meehan's own words:

"This little bit of history has its valuable lesson. It teaches the student to search carefully for facts and when he himself is sure of the facts not to be too easily disheartened because others do not at once see things as he does."

To be sure Mr Meehan has only half learned ~~the~~ the lesson which he himself gives out for he thinks A. ebenoides to be a species and gives his reasons for so doing but his philosophy is good.

By the way it may benefit you to have a look at the illustration in the volume of which I am speaking.  
I think you will see there the

lopsided don't know what to do 3  
with itself look which is seen in  
so many plants of *A. cris.* margin.  
I have been very busy this season and  
have not had as much opportunity  
as usual to make excursions but  
still I have been about some and  
have kept my eyes open and  
have received a number of good  
specimens by exchange

I think now that I can <sup>easily</sup> distin-  
guish the *Bottii* which is formed  
from *cristatum* with typical  
*spinulosum* and the one ~~one~~ which  
is formed from *cristatum* with  
*intermedium* and I have  
got possession of all probable hybrids  
in the genus *A. spiculiferus* which  
grow in the Eastern states except  
ing the one which is formed from  
*oblideatum* and *marginalis*  
which I have never yet seen

I had some friends sent me this  
spring by a lady in New York  
state asking me what I supposed

they were I took the friends just as I received them and showed them to the boy who accompanied us over to Seabrook woods. I asked him to name them and he said that is a Dick Goldie annual spinulosum which was the conclusion to which I had come

You probably don't take much stock in what I have written but in my investigation into hybrids I have run across some facts which have a bearing on a published opinion of yours

Why do not *A. spinulosum* typical and *A. spin intermedium* mix together more frequently if they are of the same species? They do mix but not as commonly as *cristatum* with either

Now, is it that *intermedium* forms a *dildatum* variety just as typical *spinulosum* does. I had never seen genuine *dildatum* until last autumn when I discovered

5

ered it in Hennings ton N.H. and was much surprised at its appearance. Can send you ~~a~~ specimens illustrating what I mean if you would like them.

What is intermedium intermediate between. It surely is not intermediate between spinulosum typical and dilatatum. It seems rather to me to mere parallel with it.

Is it not likely that spinulosum is an introduced form whilst intermedium is a form that has been thoroughly Americanized?

I struck a patch of *B. matricariae* folium last week that would do your eyes good. It was a bit late for good fruit but the size of the patch was a wonder to me. It was about two rods wide and 3 or 4 rods long and the plants were so numerous ~~a~~ nearly all over it that it

was impossible to step without crushing from two to a dozen of them. Some of the plants were fifteen inches high and they would have been in full fruit I should think about June 15.

The same day I discovered another lot of *Brychium* growing in sphagnum-amongst this tall *Carex* sensibilis. The plants were all about 2 $\frac{1}{2}$  inches high not mature very simple in structure having about four sporangia on each side of the fertile part whilst the sterile part was uniformly three lobed with the tip bending down over the fertile ~~part~~ which was not reflexed. According to your rules it seems to have been *B. lanceolatum*. but it seems to me to be a curious kind

I have raised Clarence Lour  
in New York and Mr Adam in  
Banbury Ct and they have both  
promised me to ~~to~~ look for  
A splenium ebenoides but I don't  
suppose that I shall get any-  
thing out of it

Raynal Dodge

1

X

Newburyport Mass 3/26/96

Dear Mr Laverport:-

your note  
of Aug 13, 1895 was duly received;  
also recently and except or-  
namentation from the B.G.  
I judge from your remarks  
that you have about given up  
the idea that *A. spinulosa inter-  
media* is a distinct species but if  
you have I have not. This dilata-  
ted form of *intermedia* is some-  
thing more than a mere varia-  
tion. I could show you two  
hundred plants growing  
together and every plant would

have dilated pinnate some of the<sup>2</sup>  
pinnules being 4 and even five  
inches long. I believe that most  
of the variations come from mixing  
with typical species - which is  
not very usual. I can't understand  
how it is ~~that~~ that all our trees  
and nearly all of our native flow-  
ering plants are distinct from  
the European sorts when we have  
so many of the Fideiace common  
to both continents. I suspect that  
some of these things have been  
planted unknowingly.

Please give me further information  
about this book you speak of viz  
"Lover fifty years in fern-growing"

I have not been following up  
my investigation on the Aspidium  
hybrids but have not given the  
subject up at all

The fact is, last season I started  
in collecting the Isoetaceae

If you see the "Linnaea fern" <sup>3</sup>  
bulletin you are probably aware  
that it is intended in the July  
number to have a "synposium"  
on *L. simulata*. (They are determined  
to call it *Dryopteris*) Now the  
editor of the publication has  
written to me asking me to  
contribute. He also writes that  
if he could get a good drawing  
he would give an illustration  
of the plant. It occurred to me  
that you wrote something about  
a drawing of this plant which  
you at one time was having  
prepared and I thought that  
I would consult you before  
of replying to him. As the number  
of the bulletin is not to be published  
until July, perhaps a photograph  
of plant taken say June 10 would  
answer the purpose.

4

and before the ponds froze up  
I managed to get about two-  
thousand plant and a friend  
whom I interested in the subject  
collected about twice as many  
more. He moreover having  
much spare time at his disposal  
has corresponded and received  
plants from about every one  
in the country now living who  
has investigated these plants  
and I think that we will  
shed a little light on this sub-  
ject before long.

I intend to pay more attention  
to the Aspidium this season.  
We have discovered a new  
species of Isoetes at Trichling  
Falls about a dozen miles from  
this place & and I had intended  
to have published an account  
of it before this time. It is a  
very striking species

Do you include the fern allies  
in your collection at Horticultural  
Hall. I send you ~~to~~ check  
list including the N. A. species in  
which I have marked those which  
I may be expected to furnish you  
if you want any of them.  
I am going up to see that  
"dried garden" of yours. Perhaps  
I may have some plants  
of even the ordinary species  
which would be an addition  
to your collection.

I intend also to look over  
some of the ponds in your  
neighborhood this season  
after "fullerets" and especially  
I want to find that *I. lacustris*  
which is reported from Fresh  
pond.

Yours  
Raynal Dodge

1

X

Newburyport 5/25/96

Friend Lavenport:-

I have got  
a nut to crack and a thick shelled  
one. I am probably to write  
for & late a list of the laseu-  
lar cryptogams of New Eng-  
land arranged in the order  
of their fruiting said list to-  
be complete and including  
all the important varieties.  
The Manual as I long ago  
found is not reliable in this  
respect being very indefinite  
and often at fault.

Now this pamphlet possibly will  
have considerable circulation

in this section of the country and  
the question arises as to what I  
am to call the plaguey things  
I tell Mr Glute that if I adopt  
Underwood's nomenclature  
you will feel like giving me  
a thrashing the next time  
you see me. I have been  
thinking that perhaps I could  
adopt an intermediate course  
by giving both names in  
cases where required. What  
do you think about this.

At any rate I mean to include  
*A. criss marg.* in the list  
No I never sent Mr Underwood  
any specimens neither did I  
ever correspond with him on  
the subject but I did last  
summer inquire from  
Mr Glute why he had omitted

the hybrid form from his list, to which he replied that it was because Mr. Blackwood had decided that it had better not be included and I let it go at that.

Yes, I should much like to go ~~on~~ to Bedford and spend Sunday with you and will make arrangements with you in a couple of weeks.

In my notes on *A. simulatum* which I have written for the Bulletin I give a short account of my sending the first specimens to Prof. Eaton and with them friends of the hybrid and say that "he decided that they were undoubtedly friends of a hybrid between *A. cristatum* and *A. marginale* and advised me to publish a description of the plant."

I think that I showed you  
the original letter when we were  
sitting in Creeked Pond last  
Ecluse by the way is to make the  
drawing for A. simulatum him-  
self. I am to send him specimens  
for the purpose from my her-  
barium. I wish that he had  
fresh plants to work from  
as I should like to have him  
see the reverse position of the  
lower pinnae but simulatum  
at present is represented in  
this section by little green  
balls on stems three or four  
inches long whilst Nere  
and Thelypteris growing  
within a few feet of it are  
about a foot high. I went  
and had a look Saturday  
afternoon

I will send you plants of  
Isocoma Eatonii when I get  
more but my stock at present

is quite limited and the locality Trichling Falls New Hampshire is nearly inaccessible from these parts. I expect however next July to make a trip up there and will be sure to remember you. I forgot whether I told you that I have named it for Mr. Alpheus A. Eaton of Leaburk N. H. who first attracted my attention to it.

I do not want you to think that when I offered to give you specimens of fern allies for your herbarium that I meant it as a hint for you to give me ferns for that was furthest from my mind at the time.

Raynal Dodge

~~I consider Mr. Dodge's plant to be  
Ludwigia; and the flower is  
in no way different from specimens  
we have already collected and described.~~

\* Newburyport Aug 11 1896

Friend Carpenter,

I send by same

mail as this plant of the new  
Ludwigia. Thus far we have  
only found it on the "flats"  
at Pon on Station East Kingston  
N. H. where it grows in considerable  
abundance and is probably to  
be found in similar situations.  
These flats are a level piece of  
fresh water marsh as far as I  
have explored should say it  
was about  $1\frac{1}{2}$  miles long and  
a half mile wide with Pemigew  
river running along near the  
middle of it.

The other species of *Succowia* growing there are *ectinospica Braunii*, *ectinospica Boottii Engelmanni*, *siparia* and this one besides another which I have not as yet sufficiently studied.

This species (*Catena*) which I call after Abu Alau N. A. Eaton of Peabody N. H. who first described it) is found in ~~the~~ situations which are covered with water from November until about the middle of May during which time it grows these long leaves usually about 18 inches sometimes 24 inches and in one instance 28 inches long. As the water recedes the long leaves being left exposed to the air and sun die away and are succeeded by shorter ones about six or eight inches long and the plant continues to grow

there leaves and fruit all summer.  
It is to be noticed that the  
plant does not fully mature its  
spores until the long leaves come  
off and the plant is exposed to the  
air; consequently the macro-  
spores on the long leaved plant  
I send may not have the sculpt-  
ture on the macrospores well  
defined but on the shorter leaved  
specimens they will probably  
be found mature. These macro-  
spores are would be considered  
very small even in the smaller  
species of Isoetaceae. They are  
of remarkable shape and of  
peculiar sculpture. One plant  
was found having a "bulb"  
 $2\frac{1}{4}$  inches in diameter and  
having 175 leaves, making this  
the largest of the North American

species and probably on the whole  
large than any described by  
European authorities.

I am sorry that  
I disappointed you in June  
but the fact is I was busy  
and unavoidably detained  
here in Newbury part the last  
three Sundays in June

Yours very truly

Raynal Lodge

P.S. Impressing the specimens  
I send it is best to cut them  
in two the shorter way if the  
bulb change dries several  
times and it necessary to  
send the leaves bring them <sup>are</sup> fragile  
around in a curve or when green them

1

Nantucket Aug 5 1886

Friend T. A.enfert:

You say that you think my new guillwart to be *S. Engelmanni*.

You gave it a too hasty examination. Perhaps you examined the spores when green. Nothing can be learned in that way.

As I have collected and examined many hundred plants of *S. Engelmanni* I think that I have got to know it by this time.

Moreover I find no account of its growing places

15 inches long and with a bulb  
2 $\frac{1}{4}$  inches in diameter like one  
of this species which we found

I recognize at sight when growing  
*Fimbraria*, *Tuckermania echinospa*  
*Braunii*, *echinospa* *Boottii* *Engelmanni*  
and *Eatonii* and I think that that  
is well as *D. blodgettii* can do.  
The longest leaves on any specimen  
of *Engelmanni* which I ever  
collected were 16 inches.

I could just here  
write a good many pages giving  
differences between *Eatonii* and  
*Engelmanni* but instead of so  
doing I am going to enclose in  
an other envelope two dried  
plants one each of *Engelmanni*  
and *Eatonii*.

I shall also send a couple of wooden tubes containing spores of these plants and cover the tubes with a piece of paper. By cutting through the paper you can gain access to the spores which will be loose.

In order to render the affair more certain I will send *Engelmannia* from several localities but I cannot well spare more than one plant of *Elatini*.

Another point in this connection is that I sent you plants taken from the water but *Elatini* does not usually have well matured spores until the long leaves fall off and the sporangia have access to the air and sunshine but I am ready

4

to be judged by the plants of  
last autumn which I now send.  
You may hear something further  
concerning Tuolumne and later  
on and you need not be surprised  
if you hear of another "guillotin"  
from this locality before Christ-  
mas.

Very Truly yours

Raynal Dodge

P. S. Please notice that the spore sculpture  
is latanguliform convolute instead of form-  
ing a net work like Engelmanni; that  
the spores are much smaller and that the  
cinnissure are very wide in some speci-  
mens spinlose and that they form  
a small angle with the equatorial  
plane. Use an inch lens and a compound  
microscope. Let me know your

X

Newbury port Mass 8/14/96  
Friend Daven port,

I am very sorry that you can not accept my quillwort as new but fortunately it has been accepted by every one else interested in the family to whom I have sent specimens.

Since last spring we have sent out about fifty plants to various individuals some of them experts and yours is the first objection I have heard to accepting this as a good species.

Yes I have two copies of Engelmann's monograph

one pretty well used up.

I was aware of the dimensions Dr Engelmann gives for *T. Engelmanni* but they are not as large as are mine and besides the dimensions refer to his var. *valida* which has never been found nearer than Delaware.

I have a plant of this from Warriors mark Penn. but it is not at all like my plant.

Remark the thin fragile laminae forming the sculpture of *Engelmanni* "delicate as honey comb reticulated" to quote Dr Engelmann and then the twisted convolute thick walled markings on *Catuni*.

See the commissures perfectly straight whilst Engelmann expressly says of the family that they are curving. Notice also the low angle with the Equator

These differences between the two plants are only examples there being ~~the same~~ similar ones in their internal structure but I can not go into that subject now.

I forgot to mention in my previous letter to you that this plant is dioecious.

I am sure that you are on the wrong side of this question.

*P. Engelmanni* grows with this species at East Kingston as a rule however growing nearer the water

but I go along and separate  
them by eye.

By the way none  
of the plants I have sent you  
contain any microspores, that  
is they are all female. Any plant  
of *Fragaria ananassa* you may  
take you will find to have  
microspores in abundance  
unless it is very small. This  
is a good way to distinguish  
the two species.

I think that I  
know a little about the Rosaceae  
of this region. I have read three  
of Brauns works in German  
which I read nearly as well  
as English and I and my  
hard have about five  
thousand plants of this  
order which we have collected  
during the last three years.

and most of which we have examined. Moreover we have plants of all the species described as growing in North America besides a few from the South as yet undescribed.

I do not find that Dr Engelmann cautions against distinguishing species by the sculpture except in the case of microspores.

Another point I wish to mention is that in my opinion there various species of Isoetes as described and limited by Engelmann to a certain extent mix together but I have never

noticed anything of the sort with  
*S. Engelmanni*. It is always  
*Engelmanni* even when growing  
among other forms and I consider  
it to be the most constant form  
we have never varying much  
from Braun's description  
or varying at all except in  
size.

I send ~~on~~ by some mail  
a photograph of *S. Eatonii*  
the plant being pictured in  
its summer dress the vacant  
space between the bases of the  
new leaves and the outer edge  
of the trunk being occupied  
by the long winter and spring  
leaves. The sporangia remain  
to a considerable extent after  
the leaves have decayed down  
to their bases.

This reminds me to say that whilst last bundles can always be found in the leaves of Engelmann this is not the case with Eaton's many leaves and in fact many plants being destitute of them and curiously enough this conflicts with Dr Engelmann's classification.

An interesting discovery I have made is in relation to the composition of the integuments of the microspores. Engelmann, Braun, The Micrographic Dictionary and other sources of information which I have examined give the impression that this "chalky white crust" as Engelmann says, is organic or calcareous but with

the assistance of our local chemist  
I think that I have demon-  
strated that they are pure  
silica or nearly pure.

I have written an article  
for Blute on the Isoetaceae  
of this region in which I  
discuss this subject further.  
See next copy of the Bulletin.  
I can send you a set of  
Isoetes of this region if you  
would like them.

This is probably as  
long a letter as you will care  
to read but there is another  
subject I would like to mention.

You probably noticed  
in the last Bulletin that I  
was to write a little sketch of  
the vascular cryptogams of  
New England. I have finished

writing up the allies we have  
got into the genus *Aspidium*  
in the *Filices*. When I get  
*A. simulata* and *A. cris & margin.*  
written up which will probably  
be in a few days I propose  
sending a copy to you to  
find whether the descriptions  
meet with your approbation

With the highest esteem

Raynal Dodge

The specie with indistinct markings  
nearest the top  
the one to ~~the left~~ on the photograph  
had its siliceous coating removed  
by the action of caustic potassa

X

Newburyport Aug 22 "96

Friend Davenport.

I have been looking over the "Flora of Middlesex Co." a copy of which you kindly sent me some time since and I notice that there are three omissions of vase-crypt. in the list ~~at least~~ whose places I think might perhaps be filled. I refer to *Equisetum litorale*, *Equisetum scirpoides* and *S. Engelmannii gracilis*.

It occurred to me that perhaps you or some one in your vicinity interested in Pteridophytes might perhaps like to hunt them up and I am going to give you a few hints from my own experience.

*Equisetum litorale* although given  
both by ~~the~~ Gray and Underwood  
as occurring in New England  
in Vermont (Shores of Lake Champlain)  
is in this neighborhood one of the  
most common forms in the  
whole order. The banks of the  
Merrimac are lined with it  
and it extends up into all the  
inlets and small creeks. The  
authorities in this country have  
evidently got most of their  
information from Milde in  
his "Monographia Equisetorum"  
but I find Milde does not de-  
scribe it right as I make it  
out. He says that the spores are  
always abortive but the fact  
is this plant produces three  
kinds of stems, one the normally  
sterile running to a long point

that is to say with a long caudate  
acumination. This is the stem  
~~which~~ by which it may be recognised  
at <sup>any</sup> time in warm weather growing  
in such situations as Linumum  
grows. I think that you would  
find plenty of this growing  
on the shores of Charles river.  
The stems producing abortive  
spikes quite numerous grow in  
among the others often in mud.  
You will find them with  
these immature spikes about  
the latter part of May and  
continuing until nearly July.  
These stems are about 18 inches  
long when well grown a few  
inches shorter than the normally  
sterile ones. The third and  
fertile stem I have ~~not~~  
found growing only in

sandy wet soil: they are rather few in numbers 6-12 inches high and their time of fruiting is quite limited about June 1<sup>st</sup>

I think that you can find this thing in your region

*Equisetum scirpoides* of which we have found a good locality in Amesbury grows there on a springy bank in the shade of hemlocks and inquiry from several correspondents lead me to think that those are the conditions <sup>under</sup> in which it to be searched for. You have plenty of hemlock (*Tsuga Canadensis*) in your neighborhood and probably also the springy banks associated with it

Iosif & other is mistaken I think  
in giving the time of fruiting  
for this species as midsummer.  
I saw it down year after year  
being always too late until  
I finally found it in fruit  
the first week in May about  
the same as *Equisetum arvense*

Dr Engelmann gives  
the location of *Isocetes Engelmannii*  
as ponds and ditches rarely found  
in slow running streams. Now  
my experience is that this species  
is nearly always found in water  
where there is a current. In  
most places it seems to grow  
in small bunches to the exclu-  
sion of any other form. Very  
common here in bogs.  
But now all the quillworts  
grow and flourish well

*List of*

only in the open sun and often  
growing in banks of course  
some of the spores are carried  
into places shaded by trees  
~~water~~ and is found growing  
sometimes immersed but often  
high and dry on the bank  
in such places growing some  
times very long and slim and  
with few or weak last bundles  
and this I take it is Engelmann's  
var gracilis. You can find lots  
of it in your neighborhood.

I thought I would mention  
these facts to you now but  
you will <sup>find</sup> them touched upon  
in the next Fern Bulletin  
Mr Eaton intending to give  
an account therein of *E. litorale*  
I send you plants of the  
three species I have mentioned

although the *Equisetum* is not  
in fruit my fertile plants having  
all been disposed of

I will send the grullworts  
later but I am sorry to say  
that I did not give any  
long leaved specimens of *Ectemnius*  
sufficient attention. They have  
all perished and as it has got  
to be too late to get them  
this year I shall not be able  
to send you any now but  
will send some to you in  
their summer dress

Raynal Dodge

I enclose my abstracts in relation  
to the two new ferns

7

Newburyport Oct 14, 1896

Yes Friend Davenport, you  
are right in thinking that  
I never sent Prof. Underwood  
fronds of the hybrid fern.

I never corresponded with  
him but once which was  
several years ago, and in  
relation to quillworts.  
About three years ago I  
wrote Prof. Britton asking  
him some questions in  
regard to Aspidium

cristatum & intermedium  
He replied that they had no specimens in the herbarium and requested me if I succeeded in securing any to send some to Columbia College. The next summer I obtained plants from very near the typical locality had them compared with Judge Clinton original specimens now at Buffalo N.Y. pronounced genuine and sent fronds to Prof Britton At the same time I sent him one sterile and one fertile frond of the hybrid but no rootstock, I sent three hybrid fronds, (which were

very fine and characteristic in  
fact the best I had) so that  
he might see how they  
differed from *Bliniorianum*.  
When I told you the story  
before I cut it short and  
perhaps you got a wrong  
impression. It is pretty hard  
sometimes to make a man  
see a thing as one sees it  
himself. This comes often  
from inexperience on  
the other mans part. If you  
were to take Underwood  
on a little tramp and show  
him the situation you  
would I think make him  
a convert. for there is

no doubt but your position  
is the right one. I have a  
friend just over the ~~at~~ New  
Hampshire line whom I  
consider a very acute botanist  
Mr Alvah A. Eaton whose name  
you may have several times  
seen in the Bulletin. He had  
an article on *Ophioglossum*  
in the last number. He  
was disposed to doubt at first  
but he has long since become  
a convert. This book of mine  
takes up so much of my time  
that I have not had a  
chance to get together your  
Quillworts as I want to  
send some slides with

them and have not had a  
chance to make them  
I may send you up some  
proof sheets soon for criticism

Truly

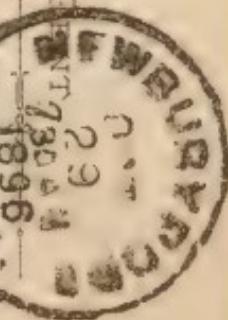
Naynal Dodge

Newburyport Sept 17/1896

Friend Dyer you will excuse me  
to pull you to write you that  
there two facts well known to me  
and to you as well when perhaps  
I will do no harm for me to  
mention you of. You are in con-  
nection with L. Simulata, The  
fact that certain species of  
this form do not produce true  
stems when growing. The lower  
parts being reduced when  
they are flattened out they be-  
come stiff & stony. Another fact  
is that after elevation the stems  
water by some cause which  
comes into contact with it every  
period of ten minutes it can  
possibly be found to stand

Dodge

POSTAL CARD - ONE CENT

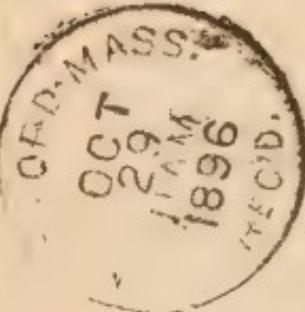


# United States of America

THIS SIDE IS FOR THE ADDRESS ONLY.



1896  
1896  
1896  
1896



Mr. Geo. E. Lawrence  
Montgomery  
Ala.

J

X

Newburyport Nov 8, 1896

Friend Lawrenceport,

I sat down

a few minutes ago to reread your article on the hybrid fern - which by the way is a very good one - when I had a new thought occur to me which I am going to give you while it is fresh.

Mahan's remarks in Vol 1<sup>st</sup> of Series II of his "Flowers and Ferns of the U.S." ~~that~~ in connection with his illustration of *A. stenocleia* (I quote from memory) that attempts have been made to hybridize ferns by sowing the spores very thick so that the prothallium will be crushed.

up edgeways with the idea of causing the antheridia of one prothallium to enter the archegonia of another. But he remarks that not much success has been attained in this way and says something about there not being one chance in a million of this occurrence taking place.

~~Other~~ "The minute anatomy has been carefully studied in only a few of our native ferns and fewer still have been watched through the phases of their life history" (Underwood's Our Native Ferns, page 74)

"In some species notably the Ostrich Fern the two kinds of sexual organs are produced on separate prothallia so that the plant becomes dioecious" (P. 20)

What if either *A. cristatum*  
or *A. marginale* is dicecious  
Who has ever investigated this  
If any one it is probably Douglass  
Campbell. I have not access  
to his book on the Development  
of Ferns and Mosses but it  
is quite evident that if one or  
either of the parent ferns of  
our species produces dicecious  
prothallia that then this case  
of ours become entirely clear  
for there is evidently no reason  
why the antheridia of one sort  
of prothallium should not enter  
the archegonia of another sort  
and as the ferns are very near  
allies they ~~not~~ would probably  
fertilize it this occurrence ta  
king place just where we  
should expect that is at the  
foot of *cladocerites* where the

two ferns meet. At any rate  
that is the way I am betting  
until I find out more about  
it. If no one has happened to  
think that the ~~particular~~ fact  
of dioicity has a bearing on the  
hybridity of ferns I don't know  
but what I shall investigate  
it myself.

Respectfully

Raynal Dodge

Newburyport Mass 12/9/96

Friend Davenport -

I am glad  
to see that you are moving  
along towards the position  
I have sometimes taken in  
discussing with you the sub-  
ject of hybridism. You write  
that Prof. Underwood objects  
to describing hybrids as not  
being specifically distinct  
but I am foolish enough  
to think that he has descri-

bed three hybrids in Britton's  
New Flora and that I could  
prove it if I was circum-  
stanced so that I had an  
opportunity. Besides this  
I know of several others  
which are native to these  
New England States and  
have specimens of them.  
The advocates of this system  
of searching out the original  
name and of making every  
thing to conform to it are  
going to find themselves  
in a peculiar position event-  
ually. The number of recog-  
nized hybrids is going to  
increase and meanwhile

some plants now considered species will be shown to be hybrids so that hybrids will have two different kinds of names. What will they do about it. Now don't you think that I am talking wild. I can form a pretty good judgment on a subject when I know all the circumstances, and the best place to find out the circumstances in this case is in the woods and swamps. Underwood I think received the hybrid from Dr Graves of New London C.t. I suggested to

the Dr last winter that he  
look for it the present year  
and he sent me some fine  
specimens awhile ago as well  
as of *D. simulata* and *T. Tsch-  
ernmanni* the latter of which  
has previously only been  
reported from your neigh-  
borhood. I may at some time  
join your Hart. Soc. but I  
am not much of a joiner.

You probably remember  
that I wrote you awhile  
ago relating to the crust on  
the macrospores of the  
*Isoetaceae* being composed  
largely of silica and that I  
thought that it had escaped

the observation of the german  
botanists. I have had some  
spores analyzed and find  
that the crust is about 90%  
silica. Now I wish that you  
would do me the favor of  
copying and sending to me  
just what H. ofneister  
says about it. I had a person  
from the city here go to  
your library and look the  
matter up but he did not  
understand very well what  
was wanted. You have ~~already~~  
already been obliging enough  
to consult Campbell in the  
matter and I have Yachs  
~~Lehrbuch~~ which ~~does~~  
~~not~~ makes no mention

of the matter. If Worcester  
does but I would like to  
know just what he says.  
Possibly too you may have  
a later edition of the Micro-  
graphical Dictionary (English)  
than I have which may  
have some reference to it.  
There is nothing in the  
older edition.

The fact is there spores  
sweat almost pure silica  
having the appearance of  
carbonate of lime and as  
near as I can find out ~~only~~  
~~as~~ ~~the~~ the German botanists  
have not taken in the situation  
I am not going to use the  
photograph of *J. Galvini*.

which I sent you. The figure  
of the plant did not suit  
me so that I have had  
two photographs taken which  
will give me fuller dissec-  
tions. I hope to publish in  
the January number of  
the Bot. Gazette.

Raynal Dodge

When I say that there are three  
hybrids described in Britton's  
*Flora* I include neither  
*A. eburneum* nor *A. parvulum*.  
That is a wretched illustration  
of *A. simulatum* in the New  
*Flora*.

Newburyport Mass 12/1/96

Friend Davenport:-

it is all  
right regarding Hofmeister.  
My German friend here got  
a copy and I have given  
it an examination. I sent  
in my Abs. last week and re -  
ceived a letter to day from  
Prof. Coulter ~~the~~ stating that  
the article would appear in  
~~the~~ Jan number. I think  
that you will say that I

have dissected this quillwort  
in fairly good shape.

Palmer of Media Penn.  
writes me that he is to have  
a short article in the Dec.  
number criticising Under-  
wood's illustrations of the quill-  
worts especially ~~the~~ of the  
macrospores. Judging from  
what he wrote me I should  
say that his article was  
altogether too fierce.

I think that under the  
circumstances it would  
not be well for me to  
join the society of which  
you speak. If I were to  
become a member the

chances are that I should never attend any of their meetings I have been in Boston but once in four years and then I only passed from the Union Station to the Providence Depot.

When you wrote me that your article on the hybrid was out I wrote to the G & F people and got 50 copies ~~&~~ extras At the same time I sent 10cts asking them to send me a copy ~~of your article~~ of the paper containing your article on Simulatum as soon as it was published and also asking them

to print me 50 extras. As they did not come along I sent them another letter in relation <sup>to</sup> it. You understand that I was anxious about it because I wished to place a reference to it in the Appendix of my book and was hinted for twice. They wrote back that as soon as the article was published they would let me know. But they did not let me know and the first intimation ~~of~~ of its publication I received from you. Then I jogged their memory again and they sent me two copies.

of the paper but no excerpts  
I received the papers Monday  
and have heard nothing  
since and I don't know  
whether I shall ever get  
any extras but your men-  
toring that you have received  
none gives me a little hope

Immediately on your inform-  
ing me that simulation was  
described Dec 2 I wrote to  
Blute so that I got it in  
the Appendix all right

Of the 50 copies of G&F  
for Nov 4 I have distributed  
35.

I expect that my  
little book will be ready

next week. By reason of its condensed style and fine type it will not be as large as I expected probably about sixty pages and will sell for 35 or 50 cts according to binding. Don't you think that most people would prefer to pay the difference for good covers.

Fig 5 and 6 certainly are transposed in the numbers for the rootstock. Moreover ~~I~~ I have dug up a large number of the roots of these three ferns where they were growing very near each other and in the same kind of soil and I am of

the opinion that the bases of  
the fronds of previous years  
are much more persistent in  
simulation than in the others

I refer to your use of  
the word lamina in my  
book but I am not sure that  
I worded it to suit you

I see that Underwood  
has got *B. ter. lunariales* re-  
described as *B. bi-ternatum*

All to whom I have sent  
your illustration of the hy-  
brid fern and who were  
acquainted with say that  
Fox's drawing is excel-  
lent.

I believe that I have not told you that we have found *Lycoperdon aleurocystis* in Plum Island. That is I sent ~~Gator~~ down there early in Oct. for *L. inundatum* Bigelowii not having seen it there in August and he came back with the species I have mentioned. It had not matured its spores even Oct 5 the season here being apparently rather too short. I noticed that all the *Lycoperdins* were late this season. You will find more of this in the next num-

ber of the Fern Bulletin  
I managed also to get this  
inserted in the Appendix  
of my book. W. Alphonso  
Merrill writes me that in  
the next Bulletin he gives  
his experience with *A. eben-*  
*oides*.

I don't know as you  
will care to see a copy  
of my book when I tell you  
about it. The fact is that  
Cleve and the publication  
of Britton and Brown's  
New Flora ~~have~~ and one  
thing and another have  
persuaded me to give  
up the name *Aspidium*

for Dryopteris. I don't know  
as I feel like entering the  
arena in this question and  
the drift of things seems  
to be all Britton's way.  
But I wish that Under-  
wood when he decides on  
a name would stick to  
it. Now in this fern list  
of Blunts which Underwood  
is mainly responsible for  
he changed the names of  
four ~~Lycopodium~~<sup>L. quisetsius</sup>, that is  
they are unlike the names  
in Grays Manual. ~~The~~  
~~changed~~. He changes linnosum  
to fluviale. the y. in sylvaticum  
and lyceale to i. and

spells literature with one t as  
it really should be spelled.  
Now in Britton's Flora he  
has changed three of them  
back to the old spelling.  
That you see leaves me  
in the lurch. I notice too that  
in the New Flora he has  
changed ~~Pellaea~~ Pellaea  
gracilis to P. Stelleri and  
D. auriculata Braunii to  
D. Braunii. this last how-  
ever being a change of a dif-  
ferent nature. I will speak  
to Eaton regarding your  
so Bot. Soc. He would be  
a good addition to any  
botanical club.

Raynal Dodge

Newburyport Feb 1 1897

Friend Davenport:

your  
notes of Jan 21 & 30 came  
duly to hand. You ask  
if you did not order two  
copies in cloth. You certain-  
ly did and I sent you order  
to Blute. You do not say  
what you received. If you  
have received one copy  
in cloth I can send you  
an other immediately but  
if you have received paper  
covers and want two cloth  
ones I shall have to

speak to Blute about it as  
all the cloth covered copies  
I have ~~are~~ but two are  
engaged. I have half a  
dozen paper covered ones.

All I have seen yet  
of the article in the Gazette  
is the pref. but I expect some  
excerpts soon and shall  
send you some. You see  
I do not subscribe for  
the Gazette but for the  
Torrey Bulletin and ex-  
change with Eaton who  
does.

I notice that your  
remarks in the Gazette on  
the use of the word *pred*

are entirely in accord with  
the ideas in my book. (Second \*  
Edition English)

I don't quite agree with  
you when you write that  
Underwood's orthography of  
the *E* questions are to  
be considered typographical  
errors. You understand  
the spelling on just three  
was changed for *Cates'*  
list and now in the new  
flora they are all as in  
Gray's Manual. Or else  
he is careless; as for instance  
in his list of the ~~ferns~~  
ferns he found in Alabama  
as given in November No.  
of *Gazette* he mentions

*A. thelypteroides*. Now this  
is one of the names he has  
given up. Speaking  
of *Equisetum* reminds me  
of a curious discovery which  
I made this winter. I  
received some specimens  
of *Equisetum littorale*  
a year or two ago from  
Eggerton the locality be-  
ing shores of Lake Cham-  
plain as given in Gray's  
Manual. After I found  
*E. littorale* so abundant  
here on the banks of the  
Merrimac I compared  
the plants with Eggerton's  
specimens and found

that they were quite unlike  
the Vermont plants verging  
towards *E. palustre*. I am  
thinking now that *palustre*  
mixes with *arvense* making  
a hybrid just as *litoreum*  
does with *arvense*. I hope  
to investigate this further  
at some time. ~~tatius~~  
Caton is engaged now in  
studying the *Equisetums*  
but I have never mentioned  
this case to him.

The fact is that there  
are a lot of problems in  
connection with the Vas-  
cular cryptogams still  
unsolved. New ones come

to my mind quite frequently

I think that some one ought to take these Vascular Cryptograms say in Britton and Brown's range and study them up in full works and all and write an illustrated monograph on the subject. I predict that a good many facts would come to light. Now is the time to do it as Eaton's work is about out of print selling for \$40 dollars a copy nothing but the figures illustrated or described and several omitted altogether I think that a man could spend two years

time on that undertaking  
and come out whole from  
the sole of his books besides  
gaining a reputation

Why don't some of these  
people who spend so  
much money on the hot  
house culture of flowers  
see it in that way.

Many of the species have  
never been illustrated except  
by figures such as those  
in Brown and Brittens  
flora. I don't know how  
the plates of G. Eaton's look  
but if they are like the  
photographs I claim that  
they are the best that

have been made of any species  
of quillwort.

I sent a copy of my book  
to the Transcript and one to  
the Advertiser hoping that  
perhaps they would notice  
it.

Very truly yours

Raynal Dodge

\* This is certainly very gracious in  
the part of Mr. Dodge who is wholly  
inadequate to me for the "ideas", a  
fact of which he fails to make or fully an  
acknowledgment in his book as he  
ought to have done.

George C. Loomis

H

BOTANICAL LABORATORY,  
CORNELL UNIVERSITY,

X

Ithaca, New York,  
Nov. 3 1881

Mr. Davenport  
My Dear Sir

I know well  
how bad poorly scientific  
work, especially that which is  
of no value, remunerates  
its authors, and I am more  
than willing to pay what was  
due from every subscriber  
to the Monograph if he  
rightly appreciated its value  
and the evident labor and  
discrimination was in it.  
Therefore enclose the additional  
amount. not, I know, as a portion  
of a price asked, yet as some  
thing that is justly due from  
me after looking it over.

more carefully than before  
and working as I do  
with Mr. Robinson up to  
its mouth.

I have not been as fortunate  
as I had hoped, about finding  
the river botrychia about here,  
but I have collected a  
considerable number of rare  
things in other directions

P. atricarne folium, etc., the  
only & ~~one~~ of the ~~the~~ choices ones  
that I have selected, will  
believe I have rights to get  
*B. lanceolatum*. It is placed  
in *B. Sunaria*.

It looked interesting enough  
in June & a part of July  
my work, at least, in all  
the part of the river is all  
done. After July 15, it was  
very difficult to find

in Rose started in 1865 and is now  
fully developed. This is a good place  
to see the species. It is in 1865  
when I last visited the river.  
I have often heard the name  
said from time to time - but the  
name is coming up less often now  
now with the river in mind. In some  
material that I have found here - one  
thing out of the sea - the material is not at hand

for my paper

John M. Coulter

117 West 43<sup>rd</sup> Street  
New York 7<sup>th</sup> April 1883

Mr Geo. E. Davenport  
Medford, Mass.

Dear Sir

I have your S. O. Card of  
— April, and I only regret it would  
not be in my way to use more  
than a single copy of your Supple-  
-ment to your Catalogue of North  
American Ferns. (if published.)  
The "Check List" I would not want  
with good wishes, however in  
connection with the publication.—

I am Yours truly  
Robt Devine deliv

Mahale et al.

Mr. Geo. E. Allen, architect.

*Adinolepis estrellaensis* L.

what I think it is, and having my text-book in which it is described.

In Chas. Morin's "Plant life of Asia" and Dr. J. K. Small's "Flora of E. Asia" do not give any descriptions which I can make fit but in <sup>Plants</sup> Vol. II. No. 2, p. 44, there is a form *Oreocarya* mentioned which may cover this form but unfortunately I have no work containing that variety.

Some time last June I sent a specimen to Mr. Blake and asked his opinion of it, and he wrote me that it seemed to answer Prof. Weddell's description, & at the time I thought so too, but subsequently I have changed my opinion as I have seen heteromorph forms & am convinced that it is an entirely different plant, & clearly entitled to specific rank.

As you will notice the specimen I send is of same form as the normal *O. lelegium* & is petioled in a similar manner, was found growing under

similar conditions, in similar locations & fruiting at same time while the hibernatum is a smaller plant and those I found were much smaller only about 3 to 4 in long. (the sterile form) and in fact some were just passing through (last week in Nov, in fact Thanksgiving day,) and the fruits were nearly or nearly so, and were a mere number, too low to the ground to be in any great danger to be browsed by cattle, unless it was by sheep. while the obliquum & the obliquum ter rotundus (a deer chew) were green until cold weather when they have assumed a bronzed appearance & are entirely in Cumbust, & also were any way found 3 or 4 to 10 or 12 ins (the sterile form,) & the fruiting one several ins big but I have Beside the hibernatum will not be in fruit for at least a month or two yet which agrees with Dr Miers time for fruiting Red tape.

I did not take any plants of the *heterophyllum*, except one or two and did not want to collect them until in fruit.

I have several sterile finds more of the *obliquum terminatum* (as I call it) and should you wish and more of them let me know, am sorry I have not another fertile specimen.

I also have some duplicates of the *obliquum* much larger than those sent, and should you wish any more of them let me know.

I would like to know your opinion of the *Bethelia* after examination, as I have not labeled my herbarium specimens yet, waiting till I was sure what its correct name may be.

I have been fond of Botany all of my life, but my time being limited for the study of it, I am only able to go into the woods occasionally.

3

but try and make the most of what opportunities I get.

I have only been working on the ferns for 18 months or two years and do not feel as if I know very much about them.

My herbarium is not large and any additions to it will be very gratefully received.

I will add a list of what I have not got, not expecting to receive all I want, but only to show what I have not, which is a much larger list than what I have.

*Aspidium novae-angliae*

" *fragrans*

" *marginalle*

" *filix-mas*

*Asplenium pinnatifidum*

*Botrychium* (only those as I have with)

*Cheilanthes* (none)

*Pellaea* (none)

*Scolopendrium* (none)

*struthiopteris* Demarest.

Any of the above will be thankfully  
acc'd, especially the Botrychia.

Our seed specimens now of  
Botrychia, larger than those sent today,  
Woodwardia neolata

{ *congasteris* patens (Sw.) Kuntze. Nels. Vol. 16, p. 33  
 { *aspidium* " (Sw.) G. L. Ind. Acc. 16. 13, 1717  
 { *Nephrodium* " (Gmelin) Thunb. J. B. Vol. 8. 1. 46, 29105

*Polyodium incanum*!

Our seed another season, any of following  
which may be of interest from the locality  
from which they come, i.e. So far South.

*Osmunda cinnamomea*

" *rogalio*

*Woodwardia virginica*

" *neolata*.

*Athyrium filix-femina*

*Athyrium esculentum*

" *fraxinum* (L.) Link

*Poly podium* in acaulescens

*Pteris serrulata* (aduncula)

*Adiantum Cap' ven'*

*Pteris, aquatica, pseudocaudata.*

*Aspidium thelypteris*

" palmea

& perhaps one or two others which are said to be here, but which I have not found as yet.

I am in correspondence with our State Geologist (& no mean botanist) Prof Ed. Smith, with the view of getting some plants of the Asp. sphaeroides from the station at Itavanna ala, don't know how it will come out but hope for some success, if I do will let you know in case you have not that variety.

I am also trying to get some specimens of *Trichomanes* from N ala but that is quite a difficult job as that tree is very scarce.

Now my dear Sir; I hope you  
 will not deem this to long & tiresome,  
 but will bear with a struggling amateur, in hopes that I  
 may enlist your sympathy and assistance & that I may be of  
 some use to you, for you know we sometimes stumble in what we  
 most want by mere accident.  
 Hoping to have the pleasure of a reply at your convenience

I remain

Yours very truly

W C Duke

259. N. Franklin St.

Mobile

Ala

Mount Clay

March 1, 1852

W. & E. Thompson

Dear Sirs,

You by today's mail will receive a few other specimens, which may not available to come with first lot, and hope they may reach you safely and in good condition.

I will try and send shortly a small, young, slender branch of the 15. bld. plant, and try to see what it looks like, when to be of use as a specimen.

I will post upon me as in my former book and when I can send a good fruiting plant will make up some of them.

Yours very kindly etc

2

are the main ones added on of some  
form student will elect from which  
I can get in exchange some of  
the smaller novelties, or forms;

Hoping the sentiments that I have  
sent may be of use to you and  
that during his able to serve you  
further I remain

Yours truly W. E. Dodge,

Mobile Ala  
Dec 31/04

Mr Geo E. Davenport

Dear Sir:

Your favor of  
27<sup>th</sup> just came duly to hand.

But so far the specimens of which you  
spoke have not been seen - I suppose per-  
haps for some reason you were unable to  
find them when you intended, or perhaps  
they may have gone astray, however I shall  
have to send them in a day or two.

I am sending you another batch of  
Batrachia, nothing new, but I thought  
perhaps they might show some progres-  
sion or retrogression in one species -  
the other, the heterodontus will show  
or ought to show some advance work  
and in one specimen a lateral branch  
shows the menibrane very plainly, and

another one shows the point where the little root makes off.

I shall endeavor to send you specimens of this variety at stated periods so that you can trace its advance to maturity.

I have transplanted these plants into pots and avenues to study it of nights, (my only time for study) and will then make notes as I study and enter my observations in a short treatise, for your perusal or for the benefit of the readers of the "Fern Bulletin", the only thing which would deter me from the latter would be that anything which did not would smack so much of the amateur that some of my kind(?) fellow-members would (in parlance of the day) "jump me over with both feet."

I will also send several specimens which I take to be young plants, and all to be of this size & in this peculiar location, at the head of a branch, & quite dwarfed with

the overhead foliage much denser than in situations where the plants of the normal form are found) seem to be more incised than those growing in more exposed situations.

I also noticed that all the plants of the *B. obliquum* & of the *B' obliquum* (with <sup>and also the unknown</sup> lunate segments) which had fruited, the sterile fronds lying down flat in a lengthened condition; while the same plants while the plants of the same <sup>in the same locations</sup> varieties, which had not fruited at all this season, were erect & had a fresh, crisp, & green look. - and if it was not for this fact I would be more satisfied to consider the biformation a form somewhat further removed from the typical *obliquum*, than a separate variety, but when its time of coming up is considered, <sup>still</sup> its peculiar yellow cast, & the shape of its <sup>sterile</sup> frond, its semi-recurved sterile frond, showing even at this date (Dec 26<sup>th</sup>) lateral, underdeveloped, sterile fronds, & the embryo-state of the fertile frond, I am

loathe to set my opinion up for its being anything but a separate species.

I also noticed that I found it only in old abandoned fields, which were under fence, and at the edges of clumps of Cedars & Yew trees, sometimes under the overhanging boughs, but have not got it so far, in open woods where some of the best specimens of the other two (Bobby & B. latif.) were found.

I think I have enough located to supply our wants, with plants at different stages until I gather the mature plant.

I have two friends here in Mobile Messrs McNeil, (Parker & *filius*), who are ardent admirers of Prof. Maderwood and they too are after the same plant for him and I am afraid that they have located my colony (it contains 100 or more in the space of about 2 acres) if so I will have to be "up and doing" to try and not be outdone. There are some

men but we don't go over together  
much, because they seem to resent  
the fact that I am willing to  
gather information & help from other  
sources.

I am after taking what looks like  
"Truth" from whatever source I find it

I have as text books, Dr Mohr's "Plant life  
of Ala.", Dr Small's "Flora of U.S." Gray's  
"Lessons in Botany" 1871. Clites, our birds in  
their haunts" Blodwedd's "Our Native Ferns" &  
Smith's "Historia Filicium" so I lack my  
faith implicitly to none, but consult  
all, & glom here a little & there a little  
I am fixing to my next season for my  
own satisfaction to try & raise an  
*Asplenium ebenoides*, artificially, in sim-  
ilar lines to what is given in Dr  
Number F.B. by "your humble servant"  
I mean to try the *Camptosorus* <sup>(the fasciculate form)</sup> rhizophyllous  
spore with both *A. ebenoides* & *A. parvulum* &  
perhaps with *Athyrium filix-femina*

Mr Clite intimates in his work that perhaps

this cannot be done, except by sectioning, but if a chenardia is an hybrid it occurs without such means, as Nature surely does not employ any other means; but impaction or *fuxta-position* + it is on that line I shall work. - but I shd. not bore you with this line of speculation.

I have intended - before I have the pleasure of showing you, to get specimens of what *Ophioglossi* C. & S., call or Mohr in his P. L. of Aln, only two varieties *O. Cratylaphoroides* and *O. pusillum*, the latter he says "very scarce" while Dr. Small gives another, very similar to Fls + I think possibly it may be with us also, as both Fls & Galv. are I think included in the "Louisianian area" - of Botriobius, Mohr only gives three, viz *oblig.* *baternatum* + to Mobile & a reduced form of *B. virginianum* - viz *B. gracile*, the latter I have not found yet but hope for better luck another day. There is in the lower part of an

adjoining Co. (Baldwin Co) a section  
lying opposite Mud River Fls., where  
there is said to be several bones  
of ferns belonging to the trias, I  
am planning to take a trip  
there next spring if I do and ~~God's~~  
that how ever any "finds" will let you  
hear from me.

Now my dear Sir, I did not intend  
to inflict such an offering upon  
your good nature when I began  
but would beg you to excuse me  
this time & promise not to do so again  
but the study of Botany is to me the  
recreation to a man closely confined  
all day, whose means, unfortunately  
are not commensurate with his love  
of Nature.

Hoping that you will bear with a strong  
ling amateur & extend occasionally a  
helping hand, I am

Very truly Yours  
W. C. Dukes.

P.S. The thought occurred to me to give  
you the references given in Mohr's P.L. of ala,  
for while you may be familiar with all of them  
there may be one which would be of use to you.

"*Batrachium hibernatum*. (Lam) Nudus, Bot. Gaz 22: 407, pl 21. 1896

*Osmunda hibernata*. Lam, Encycl 4; 650. 1797

*Balypus lunarisoides* Michx. Fl. Bor. Am. 2: 274. 1805.

*Batrachium lunarisoides*. Siv. Syn. Fil. 172, 1806.

*B. ternatum* var *lunarisoides* De Eaton Jns. N.A. 1: 148, t. 20, f3. 1837

Eaton, Ferns N.A. 1. c.

Herb. Geog. Surv. Ala. - Herb Mohr -

Type locality -

"W. Michaux a découvert cette espèce dans la Caroline-  
méridionale"

The above is not intended in any way to instruct  
or enlighten you, but merely given in case  
they ~~may~~ throw more light upon the subject

Yours

W.C.H.

July 1<sup>st</sup> '05

At the risk of being considered tedious  
I will add a few more lines.

This evening I took a short walk in the woods  
to procure a few seeds of *Polypteron*, when  
I found a small sprout in the <sup>when</sup> ground  
across one or two plants of *Hedysarum*, which  
I dug up and send with the others to you.

The only reason that I thought them of  
sufficient interest to send was, because they  
show a peculiar form, and one which I have  
not heretofore observed.

You will notice that they have sprouted, as  
it were, a secondary sterile leaf, the old  
original sterile leaf has evidently been  
cattle-browsed, and it should judge from  
the small part of the leaf surface left  
that the food was originally of the type  
~~of~~ <sup>from</sup> ~~the~~ <sup>the</sup> leguminous form, as were all the other  
specimens immediately about them, which  
were more protected than these injured.

ones, but you will notice that in form  
and size the secondary sterile leaf  
is very similar to the small specimen  
of heterophyllum I send.

I am familiar with the fact that many  
plants try to reverse the injury done them  
in their early stages of growth, giving  
rise to the form attenuolobata in Oenothera  
& perhaps in Woodwardia, but this is the  
first instance I have noticed any such  
occurrence in the Botrychis.

Hoping that this will afford sufficient  
warrant for a second postscript to a  
too long letter under ordinary circumstances.

I remain &c.

Yours very truly  
W.C. Dixes.

Mobile ala Jan 5<sup>th</sup> 05

Mr Geo E. Davenport;

Dear Sir:

I am very glad to report that the pKge of specimens have come to hand safely, and I am delighted with them, and want to express my thanks for them, and the generous manner that you sent.

I shall certainly experience much pleasure in studying them, especially the *Scutellaria*. The notes accompanying the package have carefully read, and much enjoyed, and have made me realize that I am indeed a novice, nevertheless it gives me joy for them b. and also opens up new fields of study to me.

The only plant which I can see that you have not thoroughly investigated is the *Thlaspi* phase, but even that is not big a

to him that we have not fully investigated.

The specimens from the West & elsewhere were all given to me and shall have my careful attention.

Your treatment of the Botrychium, in connection with the two specimens last sent you have shaken my faith in its heterogeneity as a separate species, but I shall give it closer attention from now on, both in the field & those I have growing in pots at home, so that if there should develop anything abnormal I may catch it.

Our pot I have decided to stimulate with show manures, bone-dust, <sup>reg. humus</sup> slacked-lime &c to see if I can hasten the time of flowering and also increase the size of the sterile leaves, which at present I think would be very difficult.

to this I send and you will notice  
you may call it described as a  
fern in books.

One of the plants in the pots seems to  
have almost outgrown the others & although  
its distorted look & the sterile blade is  
beginning more triangular in shape &  
the segments look to me as if they are  
becoming larger & thicker which it has  
well bring it much nearer in form  
to the terminal form at least where  
it is & is also losing its peculiar result  
or semi-sterile character it now has  
many branches protracted.

I have sent a lot of spores and a few  
a colony in which green has formed  
the normal sterile arm & the terminal  
arm to side, to a friend of mine  
near Phila. who is so situated as to  
be able to grow them under favor

able circumstances and shall ask  
him to make up two forms one  
produced from these species, for if  
so that will be additional evidence  
that they are but different forms  
of the same species.

I shall also try myself on the same  
line. I think in as Mr. Blatchley's  
question at T.B. Vol XH, No 3, p 133, i.e.  
that they & the *Socobolus*'s are de-  
pendent upon a fungous being pres-  
ent for their perfection.

There are now two questions I like  
to ask, which I he obliged to you  
to answer for me at your convenience  
One is how long-lived are spores gen-  
erally? Will they keep <sup>one</sup> from one sea-  
son to the next?

Another is if you know who has  
*Synopsis Filicum* for sale? I have

written several parties, but so far  
have not been able to locate the  
publisher.

Holding myself in readiness to  
serve you in any way I can  
afford.

Very truly yours  
W.C. Burt

White Al. in 1838  
Mr. A. C. Chapman,  
Chair of Geol.

Having  
seen a few specimens of Alpinia -  
Thunbergii, from the late Prof. Daniels,  
our State Geologist, and a man  
botanist also I have sending you a  
specimen by the same tract as  
this.

I am sorry I could not send  
more, but I only got a few, but  
hope this one will be of service to  
you.

Prof. A. writes me that the  
color of this fern at Hanaa Al.  
is not near so large as it used  
was, and has been drawn upon so  
freely that it will perhaps become  
extincted.

He also writes me that "the slugs must be well poisoned by brushing them over with a solution of corrosive sublimate in alcohol, to preserve them from insects." The above may be entirely familiar to you, but at no stage mentioned in his case it is not.

I am sending some from time to time the different species of *A. cinctus* sent me by Mr. H. G. Frost, one is labeled "*A. cinctus*", another *A. Paulli*, another *A. fumiferanae nitens*, & a *Spinulum dilatatum*, it certainly makes me puzzled,

The *A. heterodon* shows no signs of a fruit spike yet, but I have my eye on them, and the first one who "gets there" before I do has got to "be up and doing".

I have found another small colony

I have visited your bushes, but they do not seem to be plentiful around Mobile, at any rate I have not come across many localities.

My plants in pots at home are growing further apart, or so it seems to me one is decidedly petiolated as I wrote you & looks more like the spec's I sent you in the Fall, & if it was more stocky it would resemble more a spec I have from Mr. C. Buelkner, Griffin corner Md. labeled B. Habenaria, & I think col <sup>carpina pub. no.</sup> ~~as H.~~, I have no text book giving that var so do not know much of its history & can only compare my young plants with my herbarium.

I shall make another trip out in the winter soon and if I see any change worthy of note will send you a

1

plant or so if not with many notes & wrote you, leaving the plants until the fruit develops.

All your kind suggestions I will send  
to Mr. Stett, Tacoma Wash., in hopes to  
be able to obtain from him *D. occidentale*  
& *elatissimum* seeds with those of *B. sin-*  
*ta* & *gracile* (which at 30 m. gives in the  
hill(s) "will have about all the var-  
iations of, or new kinds.

I am in correspondence with Mrs. Parker in N. Ala. with the view of trying to get a section of Alabama's A. Sulmatypicum + other rare ferns from that section, should there be any anonymous of chance fortunate in getting them. That would be of service to you to me. Please and I will start it down in the memo book of keep for that purpose.

I have also written to a young friend  
of mine who is in Panama, as lately  
to our house there, and I am in hopes  
of getting something interesting from  
him. Would you like that either  
interest you?

I am also trying to get some of the  
S. Amer. forms, especially Adelantus tenerum.  
Do you know any collectors in Florida  
other than Mr. S. Rapp or down south?  
I am I have consumed too much of  
your time & will close.

Hoping to have the pleasure of  
hearing from you again soon, take  
at your convenience. A. Gossard

Very truly yours

W.C. Gossard

Mobile Ala. Mar 1<sup>st</sup> 05.

Mr. Geo. E. Davenport:

Dear Sir:

I take the liberty  
of inclosing two small photographs,  
which I would be glad to have you  
look at with your eyes.

They are from two of my specimens &  
the pupae are somewhat as the identity  
of one of the larvae was quite sure.  
I have numbered them # 2 & # 3.  
# 3 I am sure is *Cambodessus* a large fly like  
but I am not certain of it. I think it  
an asphydium from staphylinid from the  
posterior position of the ova, but the mimicry  
is so perfect which puzzles me as far  
as I can make out they both have  
retinaculated wings, while the asphydium  
I believe are few-winged, then again  
they both have the little veins on the

2

specie of the funder, which I only have  
seen in the water, from  
I have a plant of it & have obtained  
a flattish form pressing down the  
end of one of the fundi, and I  
did not think the aminated  
part exactly as the water fundi.  
If it is not too much trouble could  
be glad to have your opinion.

Having now time at my disposal  
on the celebrated 22<sup>d</sup> of Oct, I expect  
several hours in the evening have had  
the pleasure of locating one or two  
new colonies of *B. hibernationis* &  
I think I will be able to remove  
the specimens I want.  
I found them this time entirely in  
the open, in old abandoned fields  
without the protection of trees, bush  
or brushwood or in company with

the obliquines, at the same were also  
two others. They were they were pale  
yellow, of a lighter green, showing  
none of the bronze, those on which  
grew in unprotected situations.

There is also a qualification don't  
be much in regard to the larger  
forms which I have spoken of as  
*B. terminalis terminalis major*, I am to  
you that they did not show as much  
of the red & yellow as the obliquine  
did, but in my last traps since  
we last except found several  
which were lying flat on the ground  
and looked like brash-bronze, much  
as the obliquine do, but found none  
with fruiting spike altho' I dug up  
several of them for the species pur-  
pose of looking for a fertile spike  
but found very agreement with the

steely green, yellow & decidedly on  
the wave, but wish to recall new  
stone found just above the ground  
in the sand rocks, below the sea  
found. The certainly must be a  
slight affinity between them and  
intercalation.

I also located some 25 or 30 plants  
of *O. bulbosum* (Dw.) found them out  
here in the open sun under shelter,  
they were just above ground (5000)  
with the fertile spike encircled by  
the spath of the sterile mid. part  
waiting for the soft sunbeams  
to cover them & make them raise  
their heads & grab their neighbors  
for the season of 1905.

I think if we were ever  
to see that in a rock bed in three  
weeks I may gather some good

*Specimens.*

I am studying the difference bet  
them in a C position, but am afraid  
I will not be able to locate the  
laters, unless by sheer accident. Still  
I mean to keep my "eye open" for  
you are told that it is the com-  
monest which always happens.  
Hoping you will pardon my  
troubling you so often & that  
you will not think my writing  
is getting "too wavy".

I remain

Yours very truly:

W.C. Gause

Mobile Ala

March 13<sup>th</sup> 1905

Mr Geo E. Parker York  
Dear Sir:

I am sending you today by mail a few more specimens.  
*Bathyraja heterodontoides* are just coming into full bloom and as you see they are of an entirely different type of fruiting and as far as I can judge are a different plant from the *B. obliquum* and also from specimens I have labeled in ~~hand~~  
etc. *B. leucostoma* major until I can get its true pedigree.

I also send a few *Ophioctenoides*, for which you do not mention them I suppose as they are of the "same breed of pups" you might like to take a look at them. I think that they are rather undersized, which may be occasion

by the cold weather, it having been  
quite severe weather for us during  
Jan & Feb.

I shall be in the forest, and if I  
find any unusually good specimens  
of either Batrachis or Ophioglossum will  
send you a few next.

I think I have sent all varieties  
which are found with us, with the  
exception of *C. susillum* and I am  
afraid I have destined to be disappointed  
in finding that one, but  
will try every chance I get to dis-  
cover it, but as the season is then  
with us is comparatively short, I am  
afraid my chances are small.

If I had been able to have as-  
sisted you in any way I am  
glad, as it would make me feel  
that perhaps I have done well to

saying you for your goodness in sending me so soon.

As I am thinking of trying some new writing, I would like to trouble you with a few questions.

My idea is to write about the  
use of platinum in the early  
inventions and policies of the  
mochallees, as concerning the authorship & author  
the archaeologist - How was it taken  
from which? Was it taken and set  
down or is it now revealed by the  
years?

Among the spec' you sent to  
me was a crested Beckonia, from  
Bear's Hill, <sup>is</sup> I remember correctly,  
Can you give me the address of  
any party that about from where I  
could procure roots? I think it is  
a particularly handsome tree.

Finally I will say that if I can be  
of even use to you in getting an  
Agent or in any other way serve  
you it shall be of great pleasure  
to command me.

Thanking you for all your kind-  
ness and noticing I may not  
get "out of touch" of your per-  
sonal good graces. I remain  
Very truly yours  
W. C. G. F. G. [Signature]

+  
1

Mobile ala ale 15  
Mr. Geo E. Davenport  
Dear Sir:

Your favor of re-  
cent date, containing the blue fruits of  
*P. serrulata* & *P. cretca*, so kind.  
Please accept my thanks for same.  
The reason why I wanted a specimen of  
the latter was because I had a specimen  
from Mr. H. A. Green of Troutville, labelled  
*P. cretca* which was identical with the  
*Pteris* which is plentiful on the brick  
walls of our cotton warehouses, and  
I was anxious to get a genuine spec'  
to see if I had been correct in label-  
ing my specimen.

The fruits will answer my purpose as  
they give the difference very clearly, and  
one would have no excuse for mis-  
naming after seeing them!

I send as many sporis of the B. you want as I could get, when I went out to get them I found that nearly all of the plants had shed their spores and the stalk of the fertile frond had turned a whitish-yellow and were all laying down, and the sterile blade had also taken on a yellowish look showing that they were about through with business for season of 1904-5.

That is those plants which had sporited a seed stalk were as above described, but those I found in sheltered or semi-sheltered situations and a few in exposed positions were still fresh and green, but not a single of the fresh looking ones had thrown up a fertile frond

I had gathered some for my own use, and a few for exchange and have selected a few of them which are as fully developed as

any I have seen, but while they are a fairly good average, I must confess that I have saved the best looking specimen of the lot for my own collection, and I don't think you will blame me for that.

I also send a lot of spores gathered back face from the typical *B. obliquum* which I thought you might want for comparison with those from other sections.

If had you intimated that you <sup>wish</sup> the spores, I would have secured you a lot from all the different forms, including my famous "*B. lunarioides major*", which I think the most graceful of the lot, and also from *C. crotalophoroides*, but I did the best for you I could and am sorry if I "left undone any thing I should have done" &c.

I am a little loathe to ask you if you ever need two small photos come

tine since, one a walking fern  
and the other one I think the  
pinnatifid spleenwort, but I expect  
that they were so small that you  
over looked them, so it don't matter,  
as the only reason I was anxious  
to settle the question was because  
I have some of the spores of the  
last mentioned one which I have  
seen with the above spleenwort and  
am anxiously awaiting results, for  
after a careful reading of the  
pamphlet by Miss Stosser, which  
you sent me, I am inclined to  
believe (from her description & the  
pictures of her hybrids) that the  
plant found at Havana also is  
~~an~~<sup>not</sup> ~~back~~<sup>very</sup> hybrid ~~between~~<sup>between</sup> *A. chenopodioides* & *A.  
pinnatifidum*, & not of a chenopodioides  
& *Complexius* ~~between~~<sup>as</sup> *phyllitis* as all  
the specimens from that station  
have <sup>are</sup> much more deeply pinnat-  
ed than were those she raised.

I will be pleased to have any root which you can send me which will not cause inconvenience to get, nor too much expense for sending.

I have a bed in which I have nearly, if not quite all of our local ferns, and am enabled by having it, to study the different varieties, when I have not the time or opportunity to go into the woods. Should you want any more of the *P. serrulata*, either *presso* or the roots I can easily send you some they are plentiful with us, and should there be any other plant you would like from our section, any of the allies, *Azallatck* or *Sagittaria Mohrii* *Epidendrum conopseum*, &c &c I will be glad to do what I can to supply them.

Hoping that this will not close our correspondence which

6

I assure you has been both instructive  
and interesting to me, and as-  
suring you of my willingness  
to serve you in any way within  
my power I remain  
Yours very truly W.C. Lukes

P.S.

The plants selected for you I failed to  
bring down town with me this morning, but  
they will follow in a day or so

Yrs truly

W.C. Lukes

Mobile Ala

Augt 20th '25

Mr. R. E. P. Anspach.

Dear Sir:

I made a long  
walky afternoon to see if I could  
make more space of rock. I  
added twenty or thirty feet, but  
found that the last were a few  
days had been so dry, and the  
sun beginning to shine quite well  
the rock fence has also been  
spaced out so the section there  
will be no more to be had for  
the season; if what I have sent  
you should prove to be few for  
what you want I can, another  
evening, start working on to see  
more, gather for you all you  
want, and then as my I did not  
have in time to send a good  
quantity to you at this time.  
I have taken the liberty of end-

you by mail a few roots of  
the tree from which I have  
had successfull in finding in  
our section, and as you men-  
tioned was long to come some  
from the spores I thought it fit  
to hope this might save you the  
trouble or would be useful in  
comparing them with those made  
with you what might differ  
being raised under different  
Climate's and therefore look about  
you that care to grow them or  
it shoule prove inconvenient  
to do so, why just and the  
earlier.

Should you continue to plant  
them, I would suggest that you  
give them a wet, potting them &  
giving just enough water from  
time to time to keep them live  
and bringing them out later, in  
a similar manner to that when

is employed by plants with  
plants requiring a period of  
rest.  
They spring up again with us  
the later part of Aug or in Sept  
owing to the fact of our having  
but little summer rain or none -  
that is the time ably enough the last  
of September and most October  
until we get in the same  
conditions.

Thus the pleasure about a week  
or so ago of finding *Gynochilus*  
*phyllanthoides*, that evidently was be-  
ing mentioned in Dr. Nels.?  
I find, and I expect that this  
is about its Southern limit.  
*Dioscorea peltata* has been described  
by a friend of mine, that also  
not being mentioned by Dr. Nels.  
Hoping that these plants may

be of use to you, and holding  
myself in readiness to receive  
you in any case I can -  
Yours

Very truly Yrs  
W C. Barker

Mobile Ala.

Oct 21/00

Mr. Geo. E. Newbold,  
Dear Sir:

In looking  
over my letters recently I came across  
this one from a gentleman living near  
Phila. and as it contains a reference  
to the prothallus of Botrychium I thought  
perhaps it might be of use to you.  
Should use, if so I shall send him  
no doubt, it is so written that  
he could easily find it again.  
Please return as I like to keep for  
reference.

I showed the specimen of Botrychium  
sent you some time ago to Prof.  
Lauda of Linz, of Material very late  
prone to be anything you let  
me know as I want to keep posted

and the way her letter reads it  
leads me to think that perhaps  
it may be a new sp<sup>ce</sup>

With Kind regards

Yours sincerely

John M. C. G.

Moline Ia.

Sept. 11<sup>th</sup> 1900

Dear Dr. Grayson  
I am sorry

I have a few moments to speak, as if it were my trouble, I would be glad to have you talk me out of it, as well as feel free and as it is about the other way.

The plant is about 8 or 9 in. high, of a peculiar growth, and the young buds have a reddish or brownish cast when first maturing, similar to the young buds of *Ulmus laevis* but the fully developed buds have a stiff, brittle feeling.

I have been <sup>now</sup> able to find what it is and would be obliged to you if you

will wonder and we its wonder  
but it will not bring us with  
it. There is also, what we expect,  
to have to do with it, we expect to remain  
to do with it.

And friend regards I mean

friends and friends,

W.C. Gaskins

Mobile Ala  
May 25/05

Mr. Geo E. Vancouver

Dear Sir:

I hope that  
this may find you lecturing  
you will again.

Will you kindly send me  
the address of A. H. Curtiss,  
if you know it?

He delivered the Florida  
lecture in T. B. for April 1905

Also do you know address  
of C. G. Baker he is well  
known in connection with the heres  
in T. D.

I am still trying to make my  
collection more complete & I  
am after some of the Sodalis  
heres yours truly

Yester. Oct. 29-05  
to Mr. Eaton's brother.  
Dear Sir:

I hope you will have an  
adequate time, and will send  
and will be obliged, your much honored  
Shanti.

I am still hammering away at  
my hobby as I have opportunity to  
do so, and have had the pleasure  
of one or two letters from Prof. Eaton  
of M'Gill Univer.

I had the temerity to write to him  
"off hand", much the same as I  
did to you, in hopes I would re-  
ceive as kind treatment from him  
as I did from you, and in that I  
was not disappointed, for he like  
all true men of science, are char-

able and considerate of those who are trying in their humble way to gain an insight into the life of Florida's reptiles.

I also find that he is not entirely in accord with Prof. Underwood, especially on the "Boticaria" question, and says that in the Boticaria, as in other lizards we have "two species".

I was prompted with a little狐疑 that he had spent some time in So. Fla. in account of his, and I am anxious to add "some" of the Floridian forms to my collection of lizards.

He has promised to send me some spec's and no doubt in due time they will be received.

Being out on a trump the other day I was reminded of one by

propose to have a look at some  
plants of it which I have found  
early this Spring as the time I  
was collecting "herbs annuals".

I found one or two plants of what  
I have called in writing your P.  
"Lunaria annua" and nearly using  
the term I found its "Convolvulus"  
which the sterile & fertile lands  
of sandy soil are here called sand  
bottoms the same as here which  
had a red ochre fine loam, we  
much the same and calling off  
the "heterotaxis" springing up right  
where the old, weathered stones had  
entered the ground, back of it  
there is from the west or from the  
old slope I did not examine, be-  
cause I wanted to watch it and  
see if it carried through the sum-

now, and if a little spike would  
exist at all, it would be bare or  
at the same time the leaves  
or smaller form would spring  
into life.

It interested me, for in one of  
the banks I have seen, the sub-  
ject said that the ground entirely  
drifted away by the beginning of  
the year in December, a breaking  
against the following July or August.

There are but two plants and  
they are a few feet high, a foot  
wide on the edge of the swamp  
under the shade & protected by  
Yucca and other shrubs.

I am on the "lookout" to see if  
I find any other similar plants,  
to find out if this is merely an  
accident or a design where the

dinner condition was probably  
 due to the reason if I had  
 anything I think about reasonably  
 well have taken one or two photos  
 of. Please add to your data, the  
 most favorable time for I would  
 find more have blotted than in  
 my first two because they were  
 shot in a form induced by  
 their owners, but, besides giving  
 them plenty of moisture and ap-  
 plications of lime mud to their mud  
 houses from the new found loc-  
 ganum to stem that they will  
 have to the regular amount before  
 they will consider it fit  
 to eat it. I will give you what I find.  
 I have also a Waddean case in  
 which I am trying to raise some  
 "pepper," I have the seeds, and

with a dark soil, in the bottom  
I have a gravelly soil, 10 or 12  
inches, in which I have two beds  
which are made from lime and  
sand, known here as "lime-stone"  
soil, these I have broken up &  
lime well finely sifted over it so as  
each to be divided into two compo-  
nents one a small green stone, in  
the other sand. I have pieces of  
A chrysanthemum, a few trifoliate  
A. angustifolium, Alyssum filiforme,  
& Camassia esculentus, and my  
pines as far as all the later will  
grow well with others as well as  
with the A. chrysanthem. but so far down  
yet no Prochallia to develop, there  
are plenty of rock round grassy slopes  
but that is all, the slopes were  
planted the last part of April.

and I thought that by this time I would have plenty of material to work on, but none so far.

What do you suppose is the trouble?

Well I expect you will wish I had stopped long before this, so will bring this volume offhand to a close.

Hoping I have not wearied or bored you

Yours affec

Very truly,

P. H. G. Lukens

Mobile, Ala.

March 31<sup>st</sup> '06

Mr. Geo. E. Davenport.

Dear Sir:

It has been many months since I have heard anything from you and I have often thought of how you are getting along and if you were able to take up systematic work again.

I have been unable to do much myself, owing to sickness in my family, all last Fall & this Winter, but have suc-

ceeded in adding quite a number of new species of ferns to my collection.

I am inclosing in this a pamphlet written by Mr Maxon, and published this Spring from Washington.

I know that you are not in accord with this line of procedure, but thought if you did not have it, you might like to keep up with what was going on."

You once spoke of having growing in your yard a Crested Dicksonia, procured

3

somewhere in Mass., "Blue  
Flax" I think it was.  
Should you be able to  
locate it at this time  
of the year I would be  
very glad to have you  
send me a root or so of  
it, but if it is not  
convenient to do so, do not  
let it worry you for I  
should not like to give  
you any trouble in that  
way.

I thought I'd like to try it  
as a specimen plant,  
because it would be out  
of the ordinary, everything

1  
+

here is either the common Boston fern, or Pieris's fern.

Now my dear Sir!  
Dont let this trouble you  
and if not convenient dont  
bother to answer this, for  
I shall know if I don't  
get any answer that  
you are not able to  
respond to my request.  
Hoping that your health  
has improved since I  
last heard from you  
and assuring you of my  
sincere wishes for the  
entire recovery of your

5

Sight, and holding myself ready to serve you in any way I can  
I remain —

Yours sincerely  
W<sup>m</sup> C. Dukes

X  
Mobile Ala.

May 19<sup>th</sup> 06

Mr Ted E Davenport,  
Medford Mass.

Dear Sir:

Package crested Demissaria  
rec'd in good condition, and I am very  
much obliged for same.

I am afraid you think I was rather  
persistent in the matter, but I thought  
the specimen was a pretty one and  
I was sure the plant would also  
prove attractive in the growing state.  
I packed it promptly, and hope to  
secure an attractive plant.

I hope you have fully recovered  
your health, and also that your  
eyesight has improved - for I should  
hate to think of your being denied  
the pleasure of botanical research,  
as well as the public losing the  
benefit of your work.  
I have been of necessity obliged

to do less collecting, and am so placed now that I do not get into the woods as often as I used, or as frequently as I should like.

I was in hopes of meeting Mr Clute last winter when he was South attending the meeting at New Orleans, but the trains were so far off schedule time that he passed Mobile in the night time and consequently I missed him. Since writing you last I have made some very pleasant correspontents among the number Mrs Taylor of Thomasville Ga, and Dr R. J. Smith of Milpitas Cal, both of whom you doubtless know.

I find those who are fond of Nature-study, are always of a pleasant disposition and ready at all times to extend the

helping hand to struggling amateurs like myself.

During last winter I received from a correspondent specimens from France, England &c, and I have taken spores from many of the species and sown them in suitable places in the neighborhood of the City in hopes that some of them would become established and add to our flora. I have also, lately set out several plants of both *Nephrolepis* and *Lya japonicum* from a station near the city which is being opened up for settlement, and birds fair to destroy the station entirely.

This is the only place I know of either species being found about here, and is the one in which Mr McNeill is mentioned of having found them in a late pamphlet.

by Prof Underwood on new ferns  
in U.S., which publication you  
have no doubt seen.

I am still "pegging" away on my  
endeavor to raise a hybrid from  
*Aspl. parvulum* & a *pennatifidum* in  
a similar manner in which Mrs.  
J. raised hers from a *ebeneum* &  
*C. rhizophyllus*, don't know if I ever  
will succeed, as I find much dif-  
ficulty in dividing the prothallium.  
Hoping you will let me know  
at any time showed I be able  
to serve you and wishing for  
you a pleasant, profit able and  
healthy summer  
I remain

Yours very truly  
W. C. Dukes

Copy of Letter from Chas. T. Drury F. L. S. to  
Maxm., Pres. C. F. Chaplin

" I have read with much interest Mr George E.  
Davenport's article on "Abnormal Forms and Hybridity in  
Ferns" and would ask to be permitted to point  
out that with reference to Mr E. F. Bowe's cross  
between Aspidium (Lastrea) filix-mas var. palea-  
ceum, known to fernists here as Lastrea pseudo-  
mas and Aspidium abbreviation known here  
as Lastrea propinqua, there is absolutely no  
question of distinct genera, nor any connection between  
the latter and Cystopteris, or Polystichum except in  
a wide sense. The species Lastrea filix-mas has  
been subdivided into three — L. filix-mas, L. pseudo-  
mas and L. propinqua by the late Mr G. B. Wol-  
aston, who pointed out sundry differences as regards  
deciduousness and other minor characters which  
certainly justify their classification as subspecies but  
no more. A cross consequently between them is  
less, not more, striking than one between Polystichum  
aculeatum and P. angulare; between which the sub-  
specific difference is more marked. As for Cystopteris,  
or Polystichum, they are both absolutely outside  
the question. Both forms of Lastrea and Nephrodium  
pure and simple, if we prefer to adopt these synonymous.

To my mind, however, there is very little evidence of a cross having taken place at all. The result of the sowing appears to have been a crop of both kinds; and as both, moreover, are given to vary, and their characters are closely akin, even a plant intermediate between the two might well be a sport per se.

With the Polystichum cross or hybrid no such doubt exists, as two distinct varieties were taken and the peculiar cruciate characters of one species appeared in resulting plants of the other species, accompanied by a considerable loss of fertility, few spores germinating.

With regard to Polyodium Schneiderii, considered by Prof. Bower as a good hybrid between P. aureum and P. vulgare var. elegantissimum, there is absolutely no room for doubt as to the alliance. P. aureum as a large growing species with broad pinnate glaucous fronds. P. v. elegantissimum is tripinnately cut into slender segments, but not constantly so, partially reverting here and there to the normal, sometimes entire fronds or only pinnae or parts of pinnae doing so, so that one and the same frond may display the fine cutting, intermediate coarser cutting and quite normal segments.

P. Schneiderii is leathery, gigantic, slightly  
 glaucous P. elegantissimum, as large as P. aureum,  
 with smaller but woolly rhizomes and partial  
 reverions of precisely the same kind; large lori  
 are produced freely, but the spores are all  
~~abnormal~~ aborted and the fertility fallacious.

Scolopendrium vulgare × Asplenium heterophyllum  
 is also a true hybrid beyond doubt. The fronds  
 in my possession are scaleless heterophyllum fronds,  
 somewhat confluent at the tips; the fructification

of the upper half is purely asplenioid, in single  
 lines; in the lower half these lines are in  
 faced pairs, i.e. scolopendrium beyond any doubt  
 at all.

The nomenclature of ferns is such a slough of  
 despond that I hardly dare refer to Mr D. B. Gilbert's  
 article on "On the Genera of Ferns"; A Study of the  
 "Aspidaceae" for fear of getting embroiled.  
 I cannot, however, help expressing my agreement  
 with him as regards Polystichum. To see these  
 lumped together with such wholly different plants  
 as Nephrodium and Cystopteris is execrable to  
 every actual grower of ferns, and in this country,  
 no one, except the terribly conservative systematic

botanists, will call them anything else but  
Polystichums

11 Shee Road, Acton, London, W.

February 11-1900

~~11~~